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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,958	03/29/2006	Shigeki Satou	890050.539USPC	1763

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EXAMINER
PAK, HANNAH J

ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,958	SATOU ET AL.	
	Examiner	Art Unit	
	Hannah Pak	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/29/2006 and 12/21/2006 and 01/13/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Double Patenting I

1. Claims 1-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of copending Application No. 10/573,959, hereinafter referred to as "U.S. Appl. '959" (US 2007/0034841). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Both the instant application and the U.S. Appl. '959 claim a method for preparing a paste for an inner electrode of a multi-layered ceramic electronic component comprising a kneading step of kneading a powder, a binder, and a solvent to form a

clay-like mixture obtained by the kneading step to lower the viscosity of the mixture, thereby slurrying the mixture.

The instant application uses a dielectric powder while the U.S. Appl. '959 employs a conductive powder. However, the term "conductive" of the U.S. Appl. '959 can include the instantly claimed dielectric powder.

Thus, one of ordinary skill in the art would have recognized the dielectric paste claimed in the current and co-pending applications are obvious variations of one another.

This is a provisional obviousness-type double patenting rejection.

2. Claims 1-16 directed to an invention not patentably distinct from claims 1-16 of commonly assigned copending Application No. 10/573,959, hereinafter referred to as "U.S. Appl. '959" (US 2007/0034841). Specifically, please refer to the discussion in paragraph 1 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Appl.' 959, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were

commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-9, 11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. (Machine Translation of JP 2002-043164) in view of Oda et al. (US 7,001,539).

Miyazaki et al. disclose a method for forming a dielectric paste for a lamination type ceramic electronic component (Paragraphs 1-3). The method involves 1) kneading a mixture of a dielectric ceramic powder, a plasticizer, an organic binder, and an organic solvent using a high speed shearing mixer, an automatic mortar mixer, and 2) adding the same or another organic solvent to obtain a slurry, and thereby, performing viscosity control (Paragraphs 16, 58, 95-96, and 145). The examples of organic binders used include ethyl cellulose, poly(meta)acrylic ester, and polyvinyl butyral (Paragraphs 63).

The organic solvents employed include butylcarbitol, terpineol, and dihydroterpineol (Paragraphs 59-60). Miyazaki et al. also disclose preparing an organic vehicle by dissolving the binder into the solvent (Paragraphs 70 and 118). Miyazaki et al. further disclose the addition of 0.5-2.0% by weight of an organic dispersing agent, e.g., nonionic system, to the ceramic paste to lower the viscosity of the mixture, measuring the degree of dispersion through the use of ultrasonic homogenizer (Paragraphs 55, 67-68, and 133).

Miyazaki et al. do not specifically mention the mixture being clay-like.

However, Miyazaki et al. teach kneading the same dielectric ceramic powder, organic binder, and organic solvent to obtain the identical or substantially identical to that claimed clay-like mixture for the same purpose of forming a dielectric paste suitable for electronic components. Therefore, it would have been also obvious to one of ordinary skill in the art to obtain the presently claimed clay-like mixture, *see MPEP § 2112, III*.

Regarding claims 5 and 6, Miyazaki et al. do not mention the specific amounts of the binder and solvent used. However, Miyazaki et al. teach employing 1-20% by weight of the binder (Paragraph 65), which overlaps with ranges recited in claims 5 and 6 (0.25-3 weight parts and 0.5-2.0 weight parts). Miyazaki et al. also teach using 10-20 weight-section of terpineol, an example of the solvent (Paragraph 118), which overlaps with the claimed ranges (4.75-19 weight parts and 5-15 weight parts). Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the invention was made, since it has been held that choosing the over lapping

portion of the ranges taught by Miyazaki et al., and the ranges claimed by the applicant, has been held to be a *prima facie* case of obviousness, *see MPEP § 2144.05: Overlapping Ranges.*

As to the amounts of solid concentration and organic vehicle recited in claims 3, 5, 6, and 7, Miyazaki et al. do not mention the specific amounts of the solid concentration and organic vehicle. They also do not mention the wetting point recited in claim 2. However, since Miyazaki et al. teach employing overlapping amounts of powders, binders and solvents, Miayzaki et al. also suggest the amounts of solid concentration and the organic vehicle overlap. Oda et al. also teach it is desirable to add a surface active agent, non-ionic surface active agents, together with the solvent, e.g. terpineol, to enhance the wetting effect of a conductive paste suitable for electronic components (Col. 1, lines 13-34 and Col. 3, lines 13-40). Thus, it would have been obvious to employ solids having the optimum concentration such as those claimed and a workable amount of organic vehicle in forming dielectric pastes useful for electronic parts, *see MPEP § 2114.05, II.* Moreover, it would have been also obvious to optimize the dielectric paste of Miyazaki et al. in view of Oda et al. by kneading the paste until the mixture reaches the wetting point through routine experimentation for improved effects, such as reliability, *see MPEP § 2114.05, II.*

4. Claims 10, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. (Machine Translation of JP 2002-043164) in view of Oda et al. (US 7,001,539) as applied to claims 1-9, 11 and 13-15 above, and further in

view of Sato et al. (Machine Translation of JP 06-072760) and a non-patent literature ("RotoMill-Colloid Mills." GlobalSpec, Inc., 1999, page 1).

The disclosures with respect to Miyazaki et al. and Oda et al. are incorporated here by reference. Although Miyazaki et al. teach employing a homogenizer for dispersion, they do not specifically mention using a colloid mill to disperse the slurry as recited in claims 10 and 12. They also do not mention employing other dispersing agents, such as a polyethyleneglycol system, recited in claim 16.

However, Sato et al. teach mixing a polyethylene glycol dispersing agent with a ceramic powder, a solvent, and a binder to obtain a ceramic sheet useful for electronic parts with advantageous properties, such as high flexibility (Paragraphs 1-2 and 9-10).

In addition, the non-patent literature teaches a colloid mill useful for breaking agglomerates and emulsifying the fluids and solids together so that the product stays stabilized and homogenized (Page 1). The non-patent literature also teaches the colloid mill is suitable for any commercial applications (Page 1), which can include pastes for electronic devices.

Given the above teachings, it would have been obvious to one of ordinary skill in the art to employ the polyethylene glycol dispersing agent having the appropriate HLB with a reasonable expectation of successfully obtaining the dielectric paste of Miyazaki et al. suitable for electronic components with desired properties. Moreover, it would have been also obvious to use the colloid mill with the enclosed type emulsifier disclosed by the non-patent literature to obtain the dielectric paste of Miyazaki et al. with advantageous properties, such as stability.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hannah Pak whose telephone number is (571) 270-5456. The examiner can normally be reached on Monday - alternating Fridays (7:30 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hannah Pak
Examiner
Art Unit 1796

/HP/

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796